

U.S.S.N. 10/747,715
Attorney Docket No. 133658-2
Page 2 of 6

Listing of claims:

1-57 (Cancelled)

58. (New) A method of assessing an amyloid-related disease comprising:

administering to a subject an imaging agent that binds to a soluble A-beta and is labeled for detection; and

non-invasively detecting the imaging agent that is present as a complex of the imaging agent bound to soluble A-beta.

59. (New) A method as in claim 58, wherein the soluble A-beta is selected from monomeric A-beta peptides, dimeric A-beta peptides, trimeric A-beta peptides, oligomers of up to 24 A-beta peptides, and combinations thereof.

60. (New) A method as in claim 59, wherein the soluble A-beta peptides of A-beta is selected from A-beta 1-38, A-beta 1-39, A-beta 1-40, A-beta 1-41, A-beta 1-42, A-beta 1-43, and combinations thereof.

61. (New) A method as in claim 58, wherein the soluble A-beta does not exhibit green birefringence when stained by Congo red.

62. (New) A method as in claim 58, wherein the imaging agent that binds to soluble A-beta comprises an antibody or an antibody fragment.

63. (New) A method as in claim 58, wherein the imaging agent is labeled with a radioisotope, a paramagnetic particle, an optical particle, and combinations thereof.

64. (New) A method as in claim 63, wherein the imaging agent is labeled with a radioisotope selected from ³H, ¹¹C, ¹⁴C, ¹⁸F, ³²P, ³⁵S, ¹²³I, ¹²⁵I, ¹³¹I, ⁵¹Cr, ³⁶Cl, ⁵⁷Co, ⁵⁹Fe, ⁷⁵Se, ¹⁵²Eu, and combinations thereof.

U.S.S.N. 10/747,715
Attorney Docket No. 133658-2
Page 3 of 6

65. (New) A method as in claim 58, wherein the imaging agent is labeled with a paramagnetic particle selected from 157Gd, 55Mn, 162 Dy, 52Cr, 56Fe, and combinations thereof.

66. (New) A method as in claim 58, wherein the imaging agent comprises an optical label selected from a fluorophore, a chemiluminescent entity, and combinations thereof.

67. (New) A method as in claim 58, wherein the step of non-invasive detection comprises generating and analyzing an image using a technique selected from positron emission tomography, magnetic resonance imaging, optical imaging, single photon emission computed tomography, ultrasound, and x-ray computed tomography.

68. (New) A method as in claim 58, wherein the step of non-invasive detection further comprises measuring the amount of imaging agent bound to soluble A-beta.

69. (New) A method of assessing an amyloid-related disease comprising:
administering to a subject having or suspected of having an amyloid-related disease, an imaging agent that specifically binds to a soluble beta-amyloid and is labeled to emit a detectable signal; and
non-invasively detecting the imaging agent bound to A-beta.

70. (New) A method as in claim 69, wherein the soluble A-beta is selected from monomeric A-beta peptides, dimeric A-beta peptides, trimeric A-beta peptides, oligomers of up to 24 A-beta peptides, and combinations thereof.

71. (New) A method as in claim 69, wherein the soluble A-beta is selected from A-beta 1-38, A-beta 1-39, A-beta 1-40, A-beta 1-41, A-beta 1-42, A-beta 1-43, and combinations thereof.

U.S.S.N. 10/747,715
Attorney Docket No. 133658-2
Page 4 of 6

72. (New) A method as in claim 69, wherein the imaging agent that binds to soluble A-beta is selected from antibodies and antibody fragments.

73. (New) A method as in claim 69, wherein the imaging agent comprises a label selected from a radioisotope, a paramagnetic particle, and an optical particle.

74. (New) A method as in claim 69, wherein the imaging agent comprises a label selected from ^3H , ^{11}C , ^{14}C , ^{18}F , ^{32}P , ^{35}S , ^{123}I , ^{125}I , ^{131}I , ^{51}Cr , ^{36}Cl , ^{57}Co , ^{59}Fe , ^{75}Se , ^{152}Eu , and combinations thereof.

75. (New) A method as in claim 69, wherein the imaging agent comprises a label selected from ^{157}Gd , ^{55}Mn , ^{162}Dy , ^{52}Cr , ^{56}Fe , and combinations thereof.

76. (New) A method as in claim 69, wherein the imaging agent comprises an optical label selected from a fluorophore and a chemiluminescent entity.

77. (New) A method as in claim 69, wherein the amyloid-related disease is Alzheimer's disease.

78. (New) A method as in claim 69, wherein the step of detecting comprises noninvasively measuring the level of the imaging agent within the subject.

79. (New) A method as in claim 69, wherein the step of non-invasive detection comprises generating and analyzing an image using a technique selected from positron emission tomography, magnetic resonance imaging, optical imaging, single photon emission computed tomography, ultrasound, and x-ray computed tomography.

U.S.S.N. 10/747,715
Attorney Docket No. 133658-2
Page 5 of 6

80. (New) A method as in claim 69, wherein the step of non-invasive detection further comprises measuring the amount of imaging agent bound to soluble A-beta.

81. (New) The method of claims 57-80, wherein the imaging agent comprises:

